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GB A 2054693

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(54) Lintel

(57) A lintel has two leaves 10,12 which are connected at the top, an upper portion 26 of one being gripped by a bent-over upper portion 28 of the other. These upper portions have coinciding spaced projections 30,32, preferably wedge-shaped. Thus separate leaves 10,12 can be held so that the projections 30,32 do not coincide, and their upper portions 26,28 can then be easily engaged. One leaf is then displaced longitudinally so that the projections engage (and wedge).

A resilient plastics U-strip 42 on the inserted portion 26 provides a thermal break and enhanced wedging.

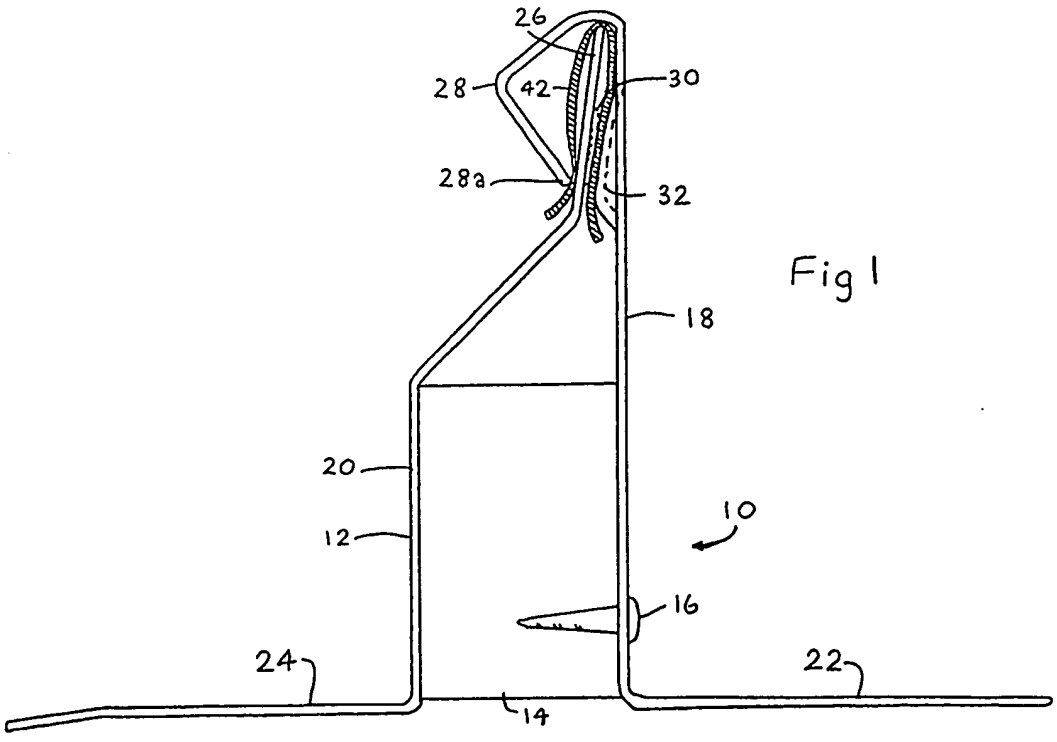

Fig 1

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Fig 1

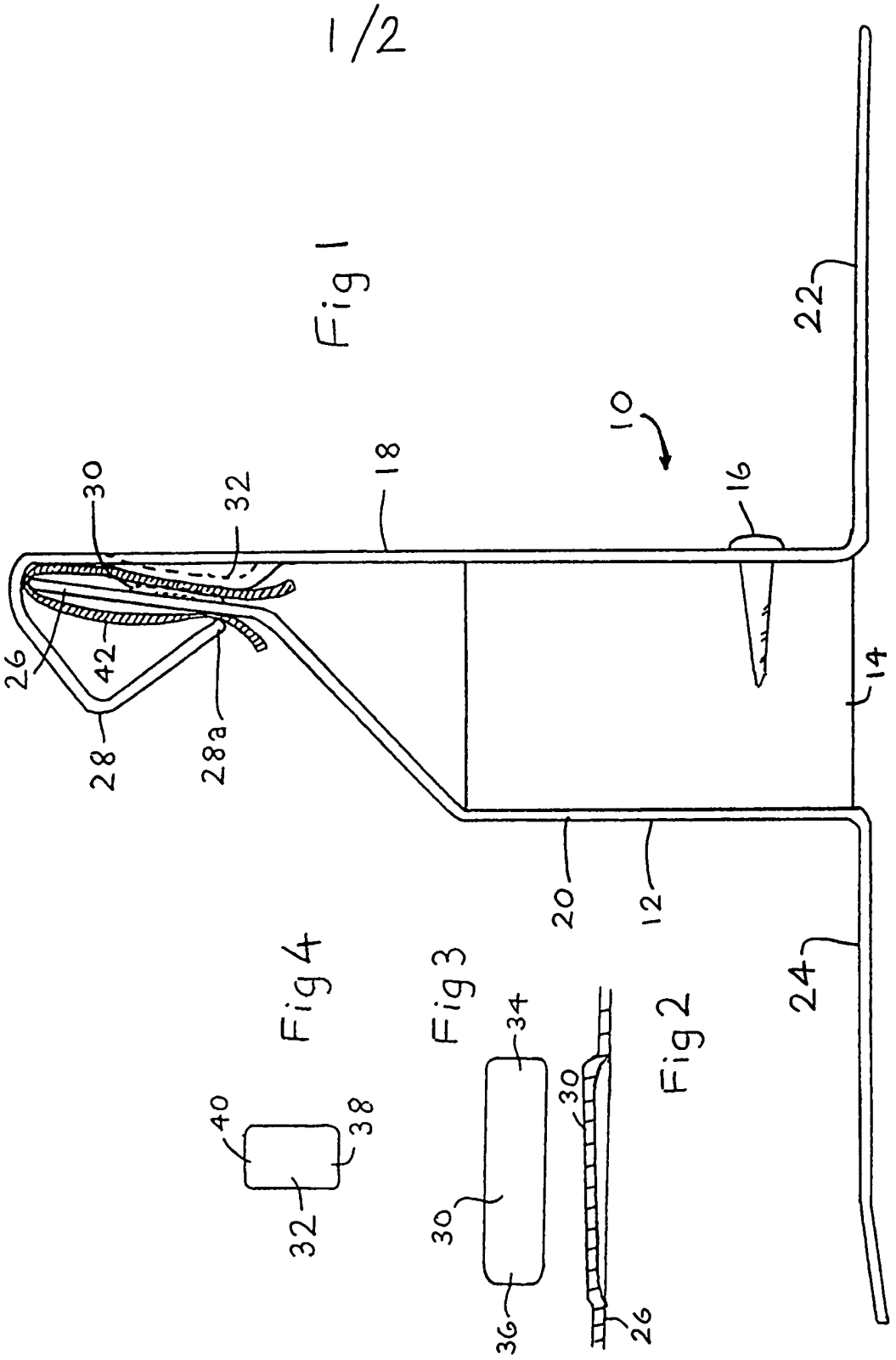

Fig 4

Fig 3

Fig 2

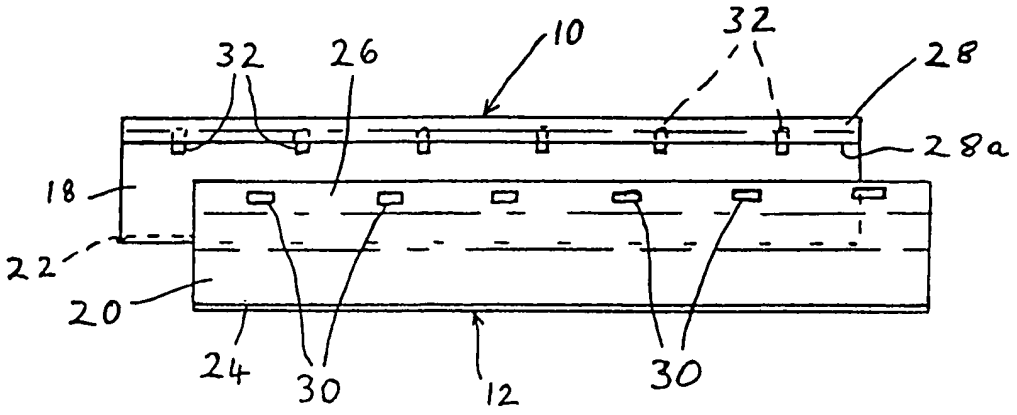

FIG 5

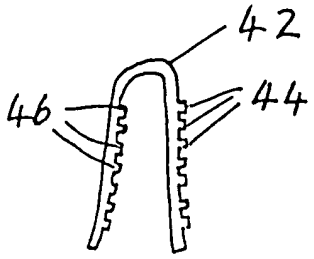

FIG 6

SPECIFICATION

Lintel

This invention relates to lintels.

U.K. patent applications Nos. 2054693, 2074212, 8111958 and 8135812 describe lintels formed from two pieces of sheet steel. One sheet forms a forward leaf and the other a rearward leaf. Both leaves have a horizontal ledge for supporting a respective skin of a cavity wall, and an upstanding portion which fits within the cavity between the skins. The upper parts of the two upstanding portions are secured together by bending the top edge of the upstanding portion of one leaf over that of the other. The other sheet may have a dimple or series of dimples which engages in the bent over part.

The two leaves are formed by pressing them from sheet steel in a suitable press. One problem is that in addition to the presses for forming the leaves, a further expensive hydraulic press is required for closing the bent over portion of one leaf over the top edge of the other. This operation cannot be performed at the same time as the formation of the leaves, because it is then difficult or impossible to mate the two leaves.

Furthermore, it is much easier to store and transport the lintels in the form of separate leaves rather than in the finished form, since the separate leaves will nest together. This is particularly the case when the lintels are to be exported. However, transporting the leaves in this separated form means that the expensive closing press needs to be on the customer's premises rather than the manufacturer's premises, and it is unlikely that the customer will wish to bear the expense of this press, or to have the trouble of operating it in order to assemble the lintel.

The present invention provides a lintel having two leaves of sheet material, each formed with an upstanding portion and a horizontal ledge arranged for supporting a respective skin of a cavity wall, the top edge of the upstanding portion of one leaf being bent over itself to receive the top edge of the upstanding portion of the other leaf, the top edge region of each leaf having a respective projection, the projection on one leaf being arranged to engage with the projection of the other leaf to hold the leaves together in the finished lintel, the projections being constructed such that when the leaves are arranged in a mutually longitudinally displaced position relative to the finished position, the projections do not coincide, whereby the top edge of one leaf can be introduced into the bent over top edge of the other leaf without the projections interfering with each other, and then longitudinally displaced until the projections are in their engaged position. This makes it possible to have only one manufacturing press for each leaf, to store and transport the leaves separately, and subsequently to assemble the leaves without the need for a press for closing the bent over portion.

The invention also provides a pair of leaves of sheet material constructed and arranged for assembly into such a lintel.

A lintel according to the invention will now be described by way of example, with reference to the accompanying drawings, wherein.

Figure 1 is an end view of the lintel,

Figure 2 is a section of a portion of one leaf of the lintel,

Figure 3 is a plan view of that portion,

Figure 4 is a plan view of a portion of the other leaf of the lintel,

Figure 5 is a schematic front elevation of the two leaves of the lintel during assembly, and

Figure 6 is a sectional view of a thermal break strip.

The lintel is of the same general form as those described in the earlier applications mentioned above, and comprises an inner leaf 10 and an outer leaf 12, both pressed from sheet steel. The inner leaf 10 may be of a stronger gauge of steel than the outer leaf 12, and/or the outer leaf 12 may be of stainless steel while the inner leaf is of cheaper, galvanised mild steel, since the inner leaf will normally have to bear larger loads and the outer leaf will be more subject to corrosion by the weather. Between the two leaves there is a series of spacer blocks 14, e.g. of timber, which are held in place by means of screws 16 through the inner leaf. Each leaf has an upstanding portion 18,20 which in use fits inside the cavity of a cavity wall, and a horizontal ledge 22, 24 which in use supports the inner and outer skins respectively of the cavity wall above an aperture such as a door or window.

The top edge region 26 of the outer leaf 12 is received within a bent over top edge portion 28 of the inner leaf 10, the bent over portion having a substantially triangular cross-sectional configuration. Each leaf 10,12 can be manufactured in a single pressing operation in a suitable arranged press.

The top edge portion 26 of the outer leaf has a series of dimples 30 which are shown in cross-section and plan in Figs. 2 and 3 respectively. The dimples are generally rectangular, with their longer dimensions arranged horizontally, and they are arranged at spaced intervals along the length of the lintel. One end 34 of the dimple 30 projects by 3mm, whereas the other end 36 projects only by 2mm, so that the dimple is wedge-shaped in the horizontal direction.

The upper region of the upstanding portion 18 of the inner leaf 10 is also formed with a series of dimples 32, and the spacing of these dimples is similar to that of the dimples 30. These dimples 32 are also rectangular in plan,

as shown in Fig. 4, though the longer dimension of the rectangle in this case is in the vertical direction. The dimples 32 are also wedge-shaped, but in this case it is the lower region 38 of the dimple 32 which projects more than the upper region 40. Thus, the angle of the wedge-shape is also in the opposite sense to the dimples 30. The angle of the upstanding portion 26 of the outer leaf 12 is at a similar angle to the wedge-angle of the dimples 32.

The two leaves 10,12, once formed in the configuration shown in Fig. 1, can be stored and transported separately, and in this condition the leaves will nest together reasonably neatly, thus improving the packing density and economising on storage space and transport costs. They can then be assembled on site as shown in Fig. 5. The two leaves are arranged one in front of the other, but staggered so that their respective projections 30,32 do not coincide. In this arrangement, it is easy to offer up the top edge region 26 of the outer leaf into the bent over portion 28. The edge 28a (see Fig. 1) of the bent over portion 28 has adequate clearance away from the main part of the inner leaf 10 to allow this. Next, the leaves are pushed together longitudinally in the direction of arrow A in Fig. 5. This brings the projections 30 into engagement with the corresponding projections 32, and they can be driven home against the horizontal wedge action of the dimples 30 by means of blows from a hammer. As this happens, the vertical wedge action of the dimples 32 will ensure that the dimples 30 and the upper edge portion 26 of the outer leaf 12 are driven fully upwardly within the bent over portion 28. This double wedge action in vertical and horizontal directions thus ensures that the leaves of the lintel are securely held together.

It is preferred that there should be no metal-to-metal contact between the two leaves of the lintel, both in order to provide a thermal break, and to prevent the possibility of electrolytic action between the dissimilar metals if one leaf is of stainless steel and the other is of galvanised mild steel. To this end, there is provided a U-shaped strip 42 which is placed over the top edge portion 26 of the outer leaf 12 before the leaves are assembled together. The strip 42 is formed from a suitable deformable, thermally insulating material such as polyvinyl chloride (PVC). The resilience of the U-shaped strip 42 also has the advantage of helping to ensure that the dimples engage with each other snugly and securely when the two leaves are correctly aligned with each other.

As shown in Fig. 6, the thermal break strip 42 may be formed with ribs 44 on the outside of that arm of the U which will lie against the upstanding portion 18 of the inner leaf 10. Similar ribs 46 may be provided on the inside portion of the other arm of the U, which will in use be in contact with the front surface of the upper edge portion 26 of the outer leaf. These ribs provide further resilience for the strip 42 where the metal parts of the two leaves bear against each other.

CLAIMS

1. A lintel having two leaves of sheet material, each formed with an upstanding portion and a horizontal ledge arranged for supporting a respective skin of a cavity wall, the top edge of the upstanding portion of one leaf being bent over itself to receive the top edge of the upstanding portion of the other leaf, the top edge region of each leaf having a respective projection, the projection on one leaf being arranged to engage with the projection of the other leaf to hold the leaves together in the finished lintel, the projections being constructed such that when the leaves are arranged in a mutually longitudinally displaced position relative to the finished position, the projections do not coincide, whereby the top edge of one leaf can be introduced into the bent over top edge of the other leaf without the projections interfering with each other, and then longitudinally displaced until the projections are in their engaged position.

2. A lintel according to claim 1 wherein one leaf has one or more said projections which are wedge-shaped in the longitudinal direction of the lintel, so that assembly of the leaves has a wedging effect.

3. A lintel according to claim 1 or claim 2 wherein the leaf with the bent over top edge has one or more said projections which are wedge-shaped in the upward direction, the height of such a projection increasing downwards.

4. A lintel according to claim 3 wherein the edge region of that leaf which is received in said bent over top edge extends substantially parallel to the wedge surface of the upwardly directed wedge(s).

5. A lintel according to any preceding claim wherein each leaf has a plurality of dimples constituting said projections.

6. A lintel according to any preceding claim further including a U-shaped strip of resilient thermally insulating material which embraces the top edge region of that leaf which is received, and insulates it from the other leaf.

7. A lintel according to claim 6 wherein the U-shaped strip has projections on surface portions engaging either or both leaves for enhancing its resilience.

8. A lintel according to any preceding claim wherein the inner leaf has said bent over top edge.

9. A lintel substantially as herein described with reference to and as illustrated in the accompanying drawings.

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